Acta Cryst..(1992). A**48**, 413–414

Obituary

Jean Wyart
1902–1992

Born in Avion, Pas-de-Calais, France, on 16 October 1902, Jean Wyart had retained strong memories from its industrious soil. He evoked it with emotion and, when he talked about his childhood, one felt how sensitive he was to the ordeals his fellow-countrymen went through, in particular during the First World War. Jean Wyart had not been used to an easy life; this gave him the serenity and the equanimity which immediately won him the trust of those who approached him.

He entered the Ecole Normale Supérieure in Paris in 1923. There, he found himself in the company of the mathematician Henri Cartan and the geophysicist Jean Coulomb. These were the times when scientific journals were beginning to publish the works of the pioneers of X-ray diffraction by crystals. Jean Wyart was fascinated. His teachers at the Ecole Normale introduced him to Charles Mauguin who welcomed him in the Mineralogy Laboratory of the Sorbonne. Charles Mauguin had a winning and perceptive personality: a deep friendship linked the two rapidly.

Jean Wyart spent his entire career in the Mineralogy Laboratory of the Sorbonne, which over the years became the Mineralogy–Crystallography Laboratory of the Pierre and Marie Curie University. In France, most mineralogists and many crystallographers consider themselves as his pupils and he steered the development of scientific activities in this field for half a century.

Jean Wyart's doctorate thesis, defended in 1933, contained structural studies of zeolites. The point needing an explanation was the great mobility of water and some cations in these alumino-silicates. Among the various types of zeolites, Jean Wyart chose the most characteristic ones. Having determined the atomic structure of chabazite, he showed the existence of big channels which act as motorways for the displacement of calcium ions and water molecules. He showed also that the 16% loss in weight due to the departure of the water molecules did not bring about any change in the structure of the alumino-silicic framework. These properties would later make these zeolites important industrial materials. Leucite also drew Jean Wyart's attention because of the progressive nature of the transition from the tetragonal to the cubic phase which is explained by the temperature-dependent behaviour of the structural ring, $Al_2Si_4O_{18}$. Jean Wyart also determined the crystalline structure of several inorganic and organic compounds such as basic zinc acetate, *para*-touluidine and tartaric acid derivatives, at a time when determining a structure using X-ray diffraction was still an adventure.

But the most original part of Jean Wyart's work lies probably in the explanation of the genesis of minerals and

rocks. It is to him that science owes the direct demonstration of the role of water in the formation of eruptive rocks. He was first to transform obsidian, which is an amorphous natural glass, into granite, using autoclaves made from special steel which could withstand pressures of 3×10^8 Pa at 770 K. Supercritical water breaks the bonds between SiO_4 tetrahedra, thus permitting the reconstruction of the crystalline structure of the minerals which make up the rock. Jean Wyart's experiments, performed most of the time in cooperation with Germain Sabatier, constituted a real turning point in experimental petrology.

Jean Wyart was also one of the pioneers of scientific and technical information. As early as 1941, he created in France the Documentation Centre to enable scientists to retrieve rapidly and efficiently the bibliographic information they needed.

In 1945, he became President of the French Mineralogical Society. In July 1946, he attended the meeting of the Provisional International Crystallographic Committee, and took part in the discussions of the Journal Subcommittee and the *Strukturbericht* Subcommittee. In 1947, he became a Co-editor of *Acta Crystallographica*, along with R. C. Evans, I. Fankuchen and A. V. Shubnikov, P. P. Ewald being the Editor. He remained a Co-editor of *Acta* until 1978. He was a member of the first Executive Committee of the International Union of Crystallography, from 1948 to 1951, a Vice-President from 1951 to 1954 and President from 1957 to 1960. He was one of the founders of the French Crystallographic Association and the French National Committee, Jean Wyart was well known by crystallographers all around the world, and contributed powerfully to the strengthening of international scientific cooperation. He was a member of the French Academy of Sciences. Many foreign academies honoured him by electing him as one of their members and by awarding him prestigious distinctions.

I was his pupil, his collaborator, his colleague for 45 years; he never seemed to grow old. He always showed the same juvenile spontaneity, never to be daunted when faced with the problems of science. He knew how to communicate his quiet enthusiasm, with the strength of a sincere, modest and learned man.

HUBERT CURIEN
Université Pierre et Marie Curie
Paris, France